ICD-55

SERVICE MANUAL

Ver 1.1 1999. 01

US Model
Canadian Model
AEP Model
E Model
Tourist Model

SPECIFICATIONS

Recording media	Built-in flash memory, Monaural recording
Recording time	SP: 32 minutes
	LP: 64 minutes
Frequency response	SP: 200 Hz - 3,400 Hz
	LP: 200 Hz - 2,500 Hz
Speaker	approx. 3.6 cm (1 7/16 in.) dia.
Power output	80 mW
Output	Earphone jack (mini jack) for 8 - 300 ohms earphone
Playback speed control	FAST: +30%
	SLOW: –15%
Power requirements	One size AAA (LR03) alkaline batteries: 1.5 V DC
Dimensions (w/h/d) (incl. projecting parts and controls)	approx. 58.0 × 83.5 × 14.7 mm (2 3/8 × 3 3/8 × 15/16 in.)
Mass (not incl. batteries)	64 g (1.8 oz)
Supplied accessories	Size AAA (LR03) alkaline battery × 1
	Handstrap (attached to the unit) × 1

Design and specifications are subject to change without notice.

IC RECORDER

MICROFILM

SONY®

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SECTION 1
SERVICING NOTES

CAUTION ON REPLACING FLASH MEMORY

The BAD-BLOCK check* must be executed, when the flash memory in this set was replaced.
The set will not operation normally, unless this check is finished.

* The BAD-BLOCK check detects an area (bad-block) in the flash memory where data validity cannot be guaranteed, and saves this information in the TOC-AREA so that a bad-block is not used.

BAD-BLOCK check Procedure:

1. Apply 1.5V from regulated power supply to the battery terminals.
2. Once the power is supplied, the check starts and then proceeds for approx. 20 seconds. (Be sure to keep applying the power during the check)
3. When the check completes, the result is shown as bellows.
   OK: Only the LCD back light LED (D503) turns on.
   NG: Red LED blinks or turns on or green LED turns on in the OPR LED (D504).
4. In case of OK, press the STOP button.

Note:

- In case of NG, check system control IC (IC701), flash memory IC and the peripheral circuit. (Particularly, check carefully the soldering of the flash memory)
- After finishing the BAD-BLOCK check, assemble the set, load the dry battery, and confirm if the set operates normally.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

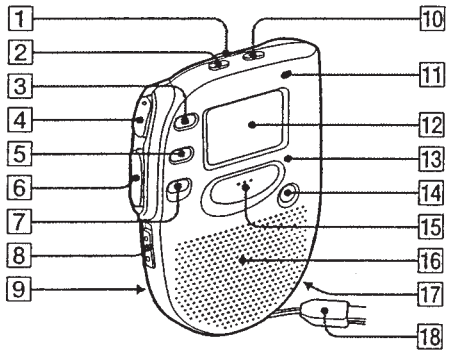
- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board. (within 3 times)
- Be careful not to apply force on the conductor when soldering or unsoldering.

This section is extracted from instruction manual.

Index to Parts and Controls

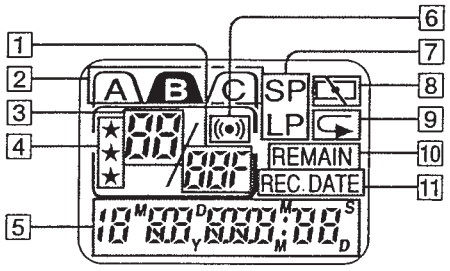
Refer to the pages indicated in parentheses for details.

Main unit



1 VOL (volume) control (14)
2 PRIORITY button (18)
3 FILE button (10, 13, 17, 20)
4 ►■PLAY/STOP (play/stop•enter) button (8, 14, 31)
5 INDEX button (22)
6 –I◄◄ /►►I+ (fast forward/fast backward•Selection of menu mode) button (13, 15, 31)
7 STOP button (11)
8 HOLD switch (36)
9 PLAY SPEED selector (25)
10 MENU button (8, 31)
11 MIC (built-in microphone) (10)
12 Display window (41)
13 OPR (operation) indicator (10)
14 ERASE button (16)
15 REC (record) START/STOP button (10)
16 Speaker
17 EAR (earphone) jack (15)
18 Hand strap

Display window



1 Total number of messages in a file (13)
Mode indication of the menu(26, 31- 36) (On, OFF, etc.)
2 File indication (13)
3 Current message number (13)
4 Priority marks (18)
5 Remaining recording time indication (10)
Recording date indication (14).
Current time/day indication (8) (15:30 TUE, etc.)
Menu indication (8, 26, 31 - 36) (ALARM, etc.)
Messages (15, 16, 18, 20, 24, 25, 30) (ERASE, SCAN, etc.)
6 Alarm indicator (28)
7 Recording mode indication (31)
8 Battery exhausted indicator (7)
9 Repeat play indicator (15)
10 REMAIN indication (10)
11 REC DATE indication (14)

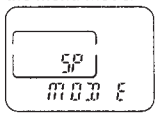
■ Additional Information

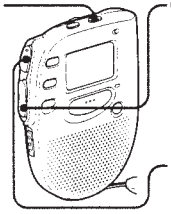
Step 2: Setting the Clock

Clock setting display appears when you insert battery for the first time, or when you insert battery after the unit has been without battery for a certain period of time. In this case, proceed from step 2.

1 Display the clock setting display.

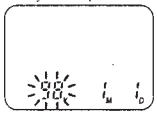
① Press MENU to enter the menu mode.*





② Press –I◄◄ once to display "SET DATE".

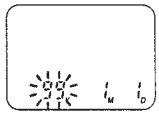
③ Press ►■PLAY/STOP.
The year digits will flash.

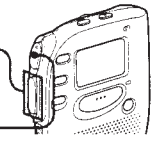


* The "ALARM" display may appear instead of the "MODE" display (see page 44).

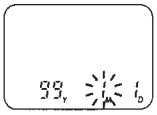
2 Set the date.

① Press –I◄◄ or ►►I+ to select the digits of the year.

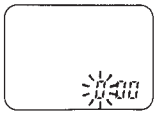




② Press ►■PLAY/STOP.
The month digits will flash.

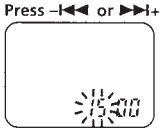


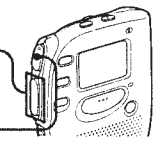
③ Set the month and day in sequence, then press ►■PLAY/STOP.
The hour digits will flash.



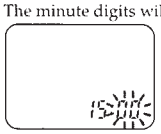
3 Set the time.

① Press –I◄◄ or ►►I+ to select the digits of the hour.

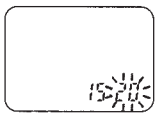




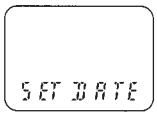
② Press ►■PLAY/STOP.
The minute digits will flash.



③ Set the minute.

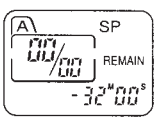


④ Press ►■PLAY/STOP at the time signal.
The display will return to "SET DATE".



4 Exit from the menu mode.

Press MENU.

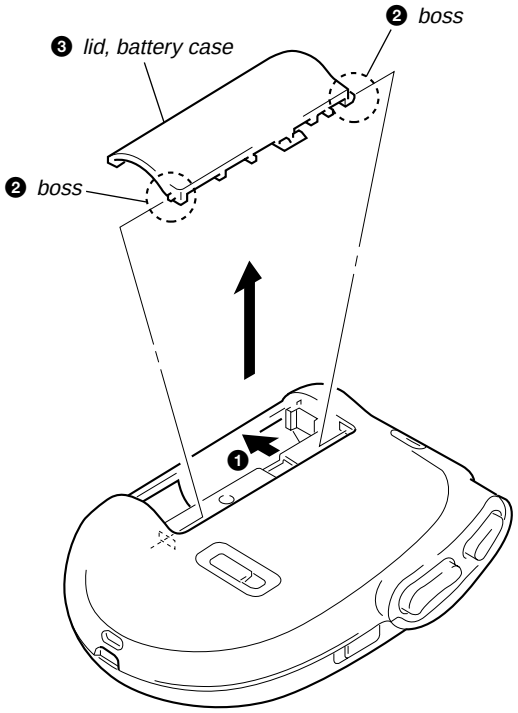


■ Getting Started

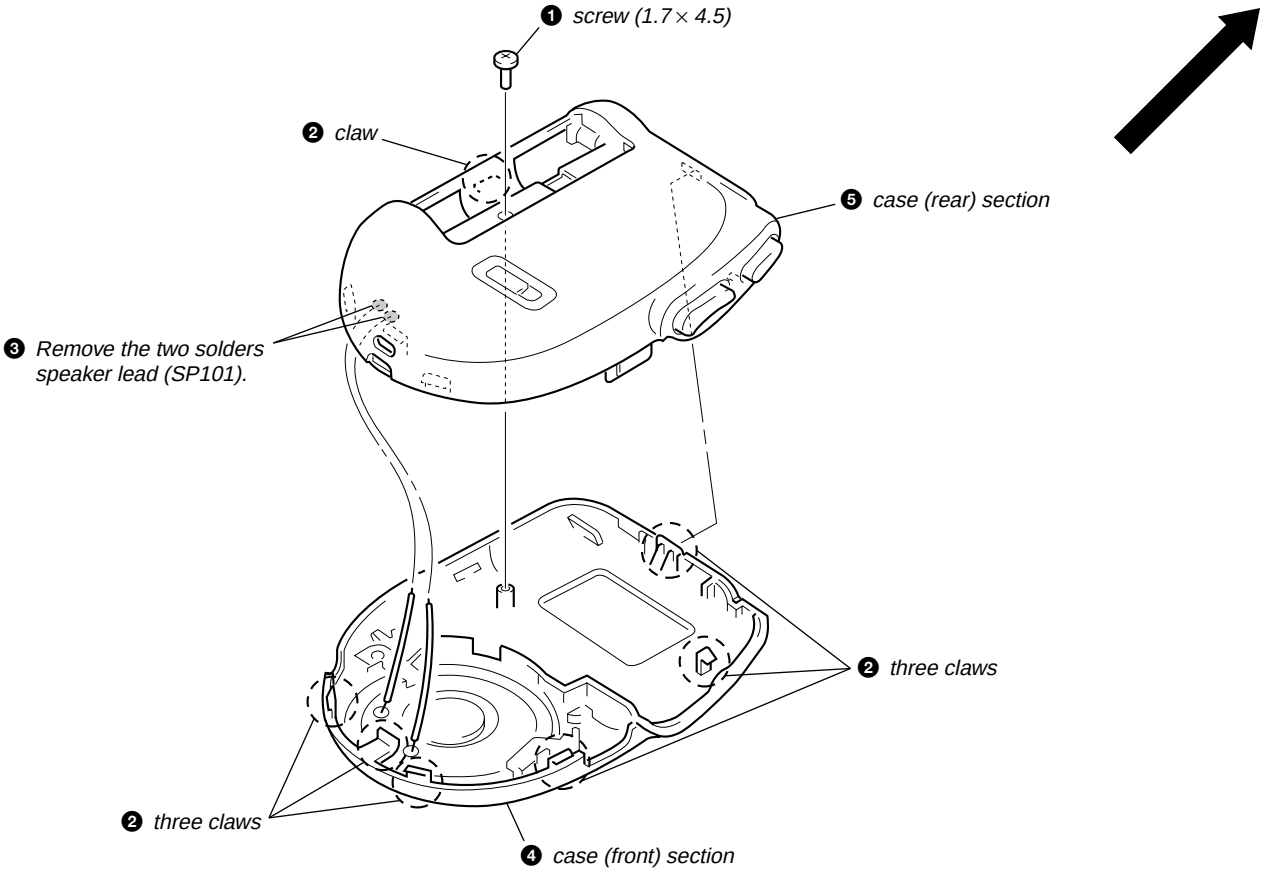
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

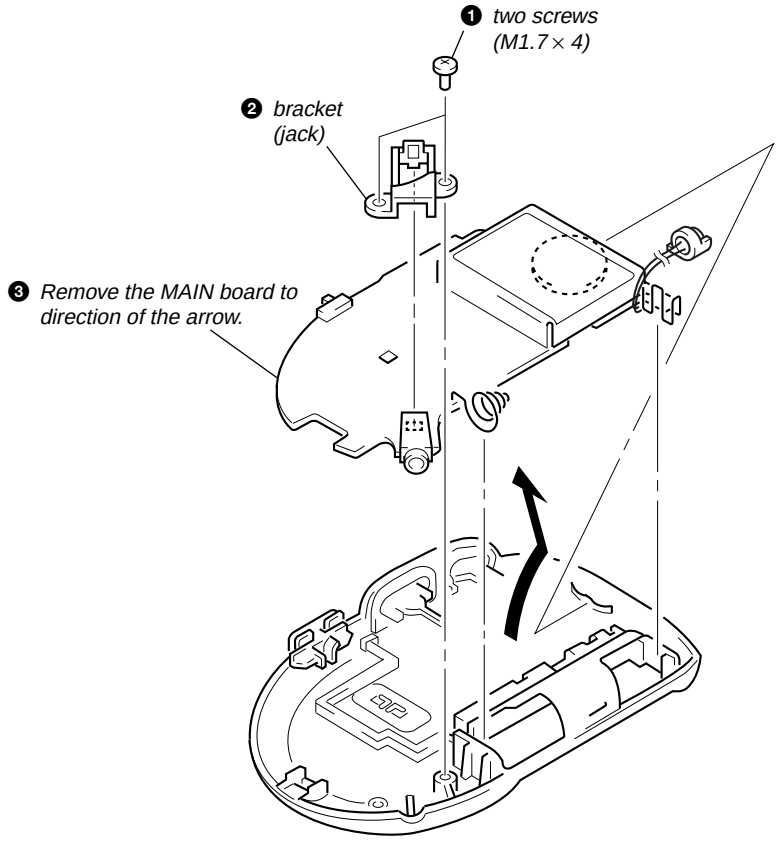
LID, BATTERY CASE



CASE (FRONT)/(REAR) SECTION

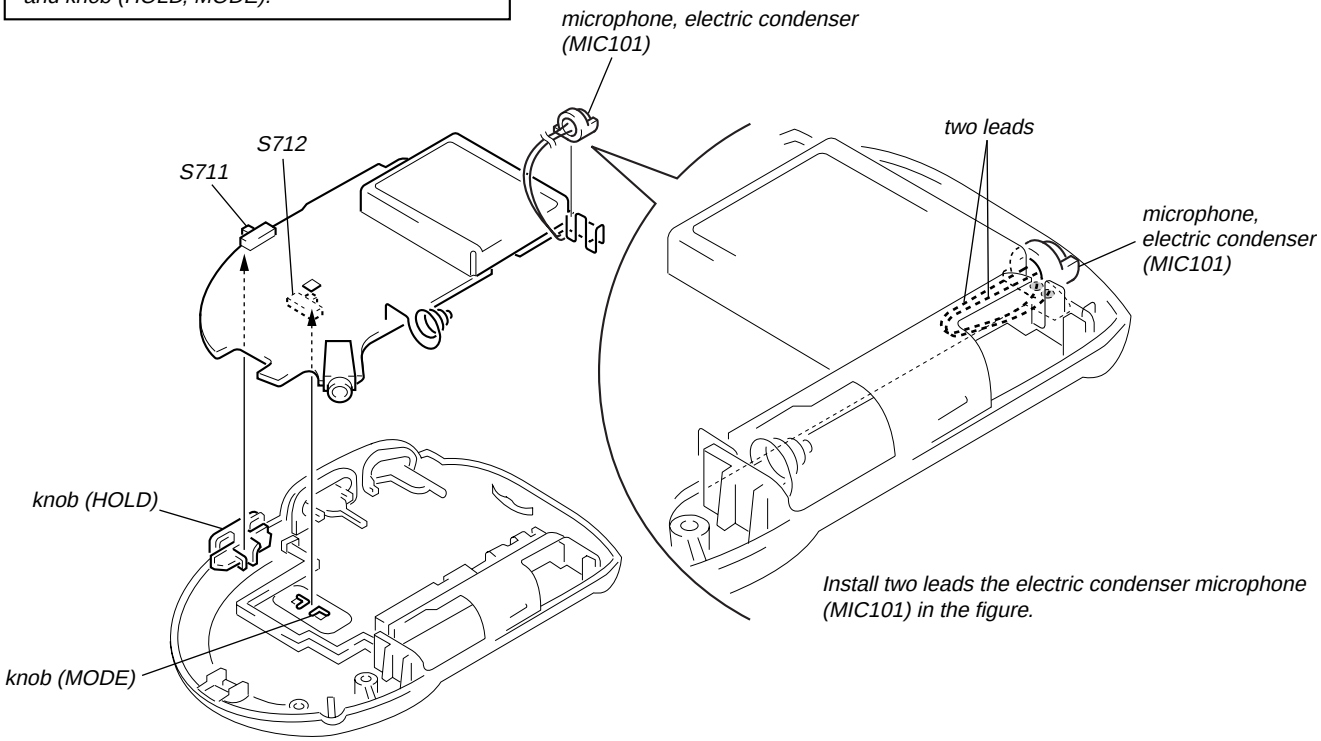

❶ screw (1.7× 4.5)
❷ claw
❺ case (rear) section
❸ Remove the two solders speaker lead (SP101).
❷ three claws
❷ three claws
❹ case (front) section

MAIN BOARD



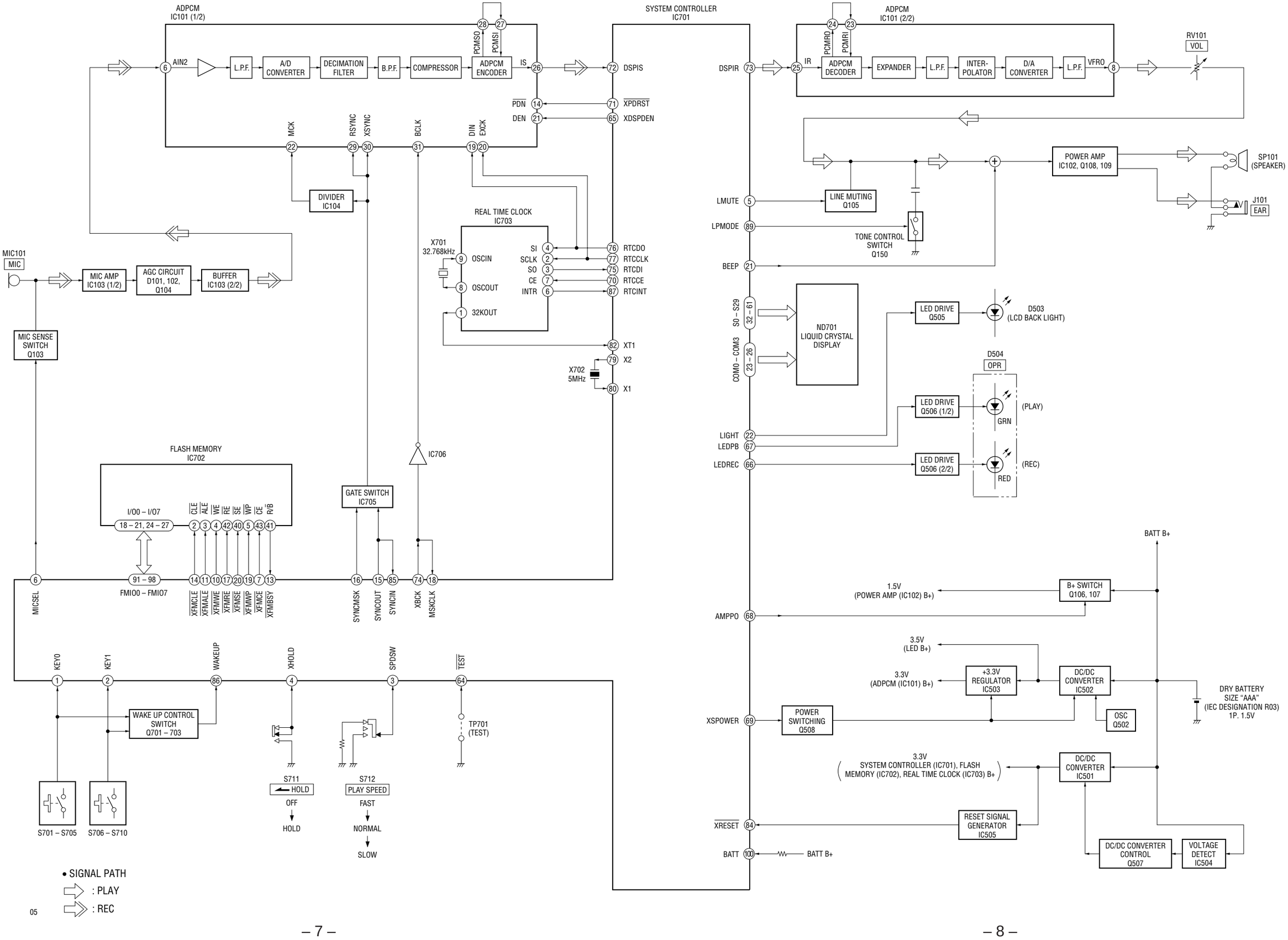
INSTALLATION "MAIN BOARD", "MICROPHONE, ELECTRIC CONDENSER" (MIC101)

On installation MAIN board adjust the S711, S712 and knob (HOLD, MODE).



SECTION 4
DIAGRAMS

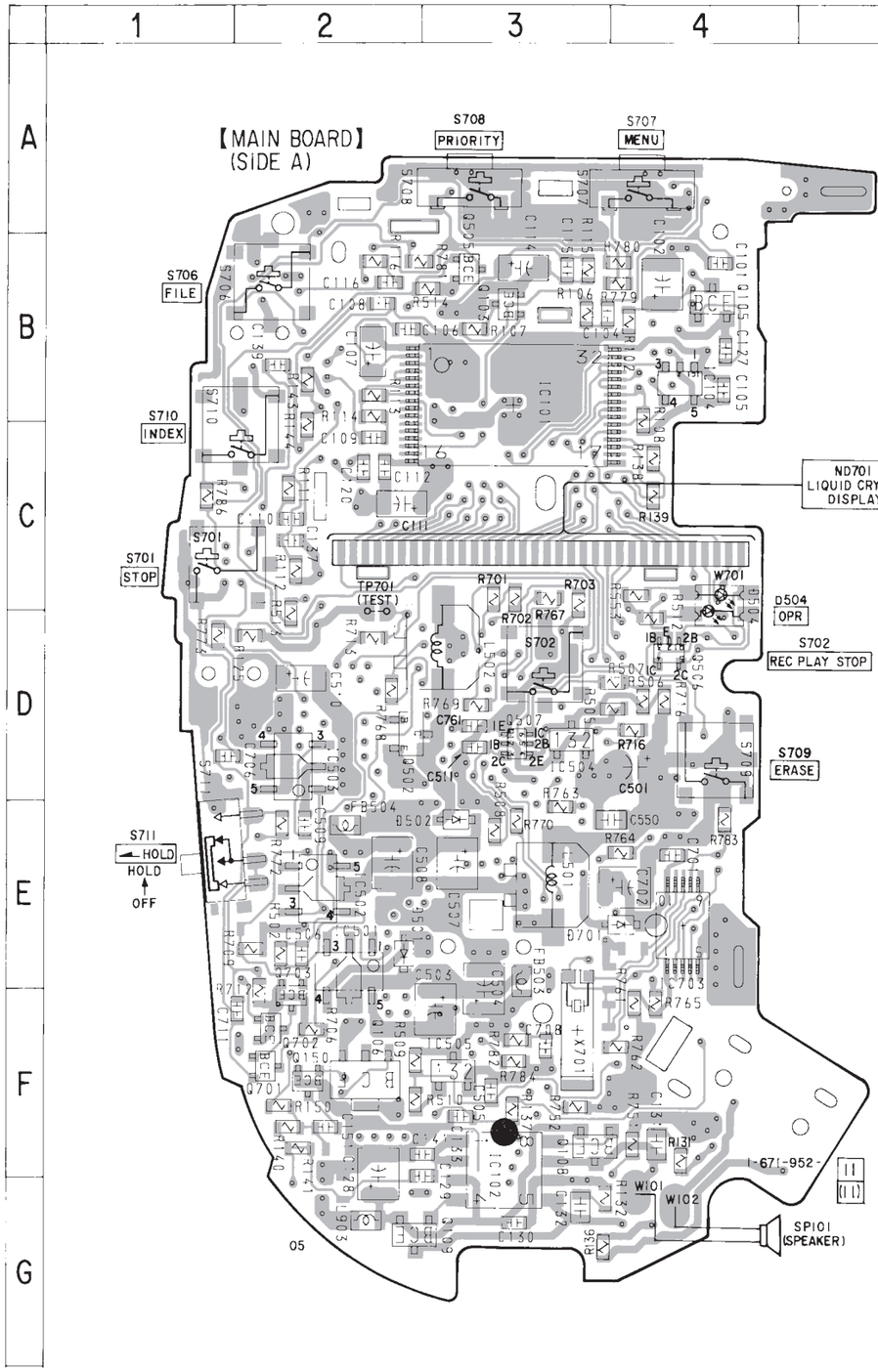
4-1. BLOCK DIAGRAM

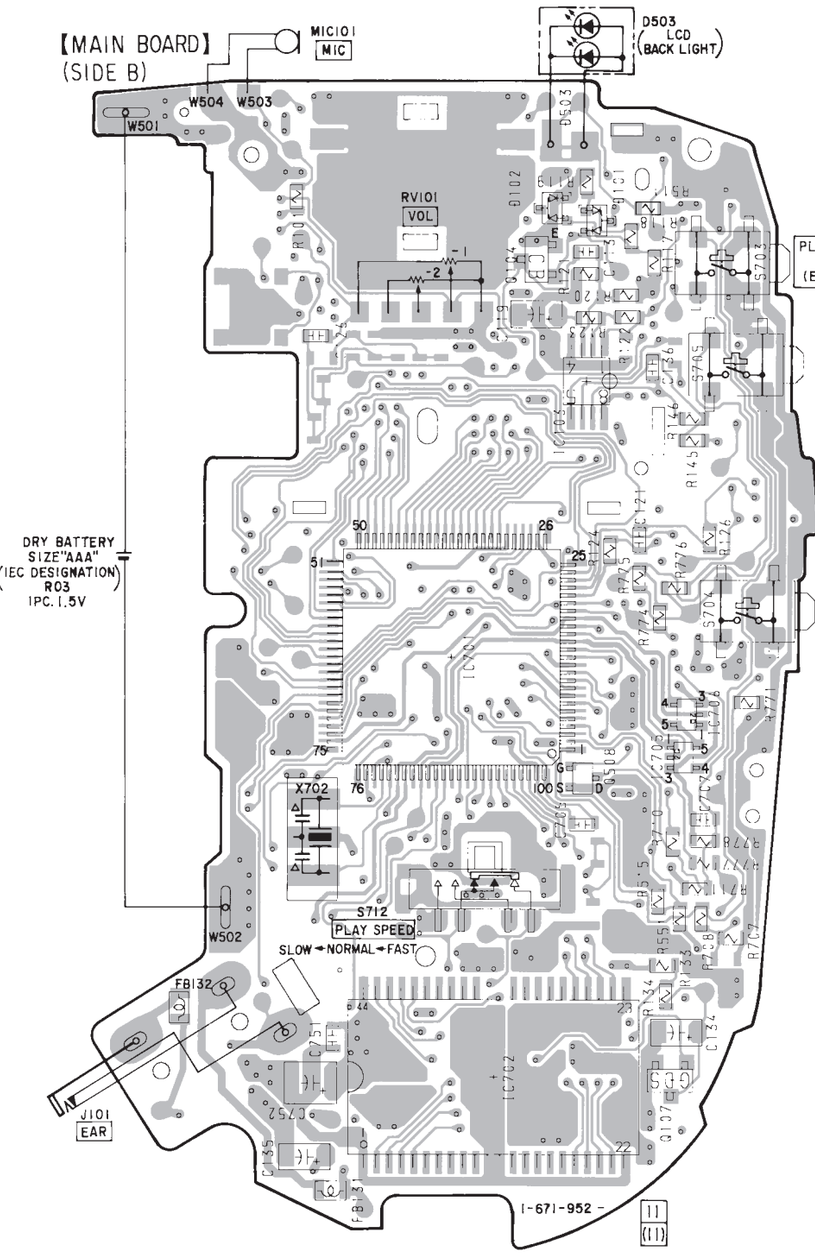


4-2. PRINTED WIRING BOARD

- **Semiconductor Location**

Ref. No.	Location
D101	B-9
D102	B-8
D501	E-2
D502	E-3
D503	A-8
D504	C-4
D701	E-4
IC101	B-3
IC102	F-3
IC103	C-9
IC104	B-4
IC501	E-2
IC502	E-2
IC503	D-2
IC504	D-3
IC505	F-3
IC701	D-8
IC702	F-8
IC703	E-4
IC705	E-9
IC706	D-9
Q103	B-3
Q104	B-8
Q105	B-4
Q106	F-2
Q107	F-9
Q108	F-3
Q109	G-3
Q150	F-2
Q502	D-2
Q505	B-3
Q506	D-4
Q507	D-3
Q508	E-8
Q701	F-2
Q702	F-2
Q703	F-2





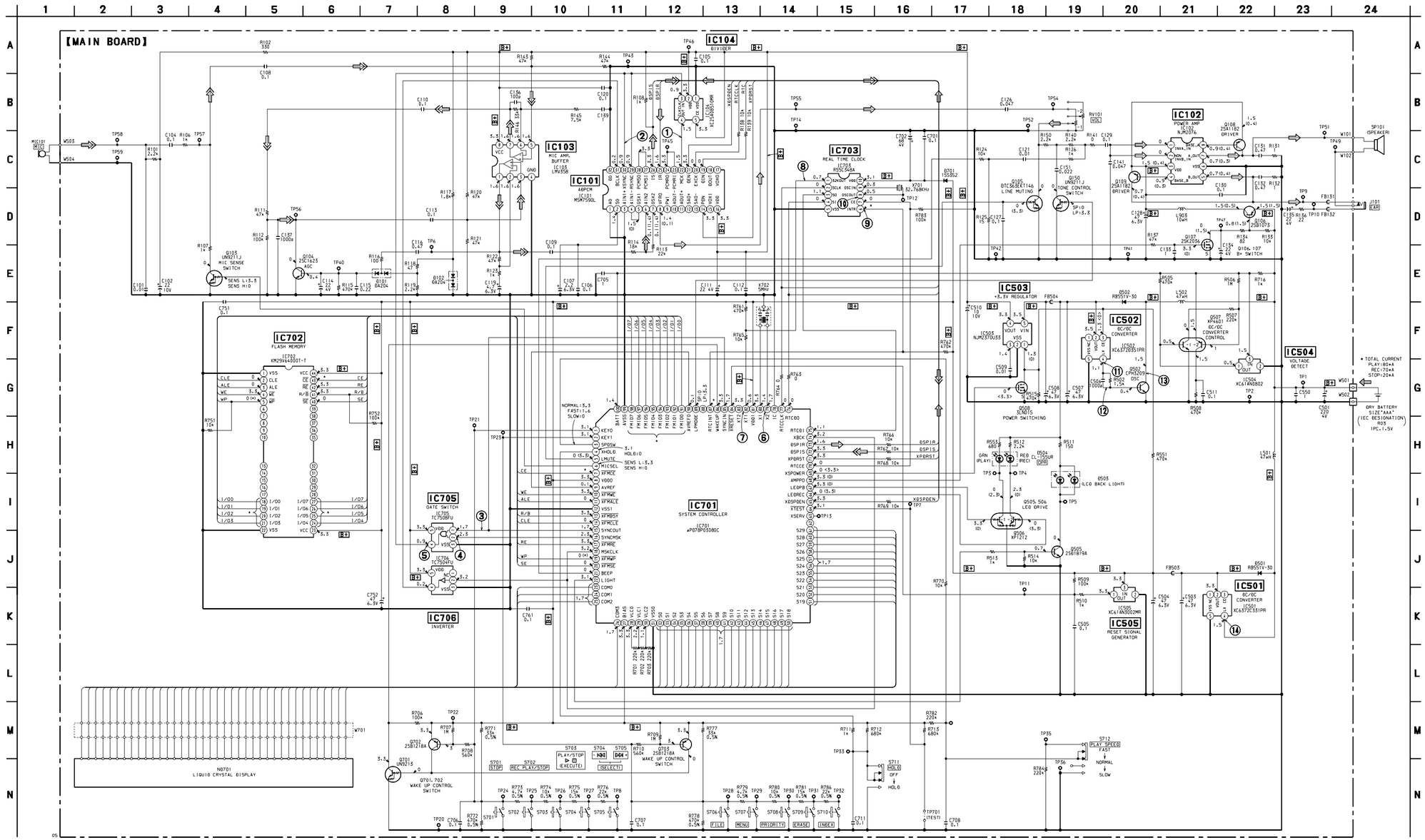
Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ○ : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- This board is multi-layer printed board. However, the patterns of intermediate-layer have not been included in the diagram.


【MAIN BOARD】
IC104 DIVIDER
IC103 MIC AMP, BUFFER
IC101 ABPCM
IC703 REAL TIME CLOCK
IC102 POWER AMP
IC503 +5.5V REGULATOR
IC502 DC/DC CONVERTER
IC504 VOLTAGE DETECT
IC702 FLASH MEMORY
IC705 GATE SWITCH
IC706 INVERTER
IC701 SYSTEM CONTROLLER
IC501 DC/DC CONVERTER
IC505 RESET SIGNAL GENERATOR
N0701 LIQUID CRYSTAL DISPLAY
Q701 WAKE UP CONTROL SWITCH
Q702 WAKE UP CONTROL SWITCH
S701 STOP
S702 REC PLAY/STOP
S703 PLAY/STOP (EXECUTE)
S704 SELECT
S705 WAKE UP CONTROL SWITCH
S711 HOLD
S712 PLAY SPEED
SP101 (SPEAKER)
J101 (EAR)
DRY BATTERY SIZE"AAA" (IEC DESIGNATION) R03 1PC.1.5V
W501
W502
W701
W101
W102
W504
W505
W506
W507
W508
W509
W510
W511
W512
W513
W514
W515
W516
W517
W518
W519
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W523
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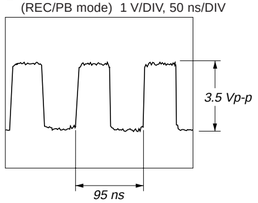
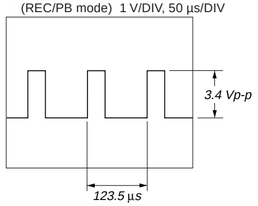
W525
W526
W527
W528
W529
W530
W531
W532
W533
W534
W535
W536
W537
W538
W539
W540
W541
W542
W543

• Waveforms
– MAIN Board –

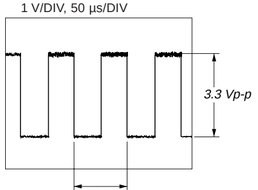
❶ IC101 ㉒ MCK, IC104 ④ CLK OUT
(REC/PB mode) 1 V/DIV, 50 ns/DIV



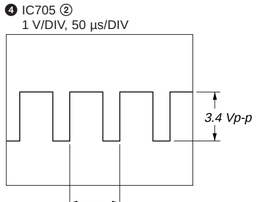
❷ IC101 ㉘ RSYNC, ㉚ XSYNC
(REC/PB mode) 1 V/DIV, 50 µs/DIV



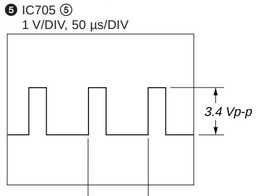
❸ IC705 ①
1 V/DIV, 50 µs/DIV



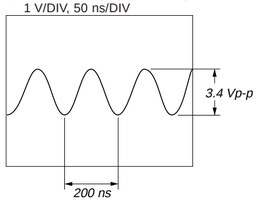
❹ IC705 ②
1 V/DIV, 50 µs/DIV



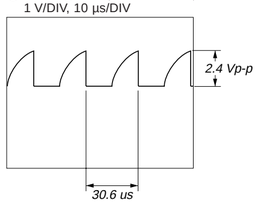
❺ IC705 ⑤
1 V/DIV, 50 µs/DIV



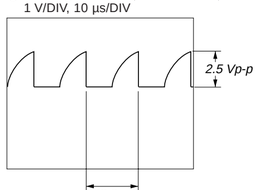
❻ IC701 ⑲ X2 (REC/PB mode)
1 V/DIV, 50 ns/DIV



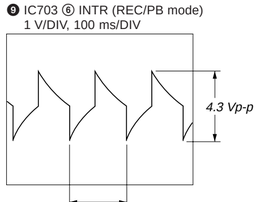
❼ IC701 ㉜ XT1 (REC/PB mode)
1 V/DIV, 10 µs/DIV



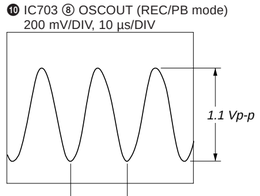
❽ IC703 ① 32KOUT (REC/PB mode)
1 V/DIV, 10 µs/DIV



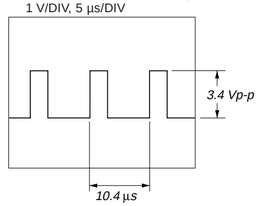
❾ IC703 ⑥ INTR (REC/PB mode)
1 V/DIV, 100 ms/DIV



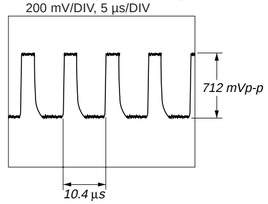
❿ IC703 ⑧ OSCOUT (REC/PB mode)
200 mV/DIV, 10 µs/DIV



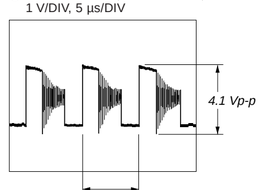
⓫ IC502 ④ LX (REC/PB mode)
1 V/DIV, 5 µs/DIV



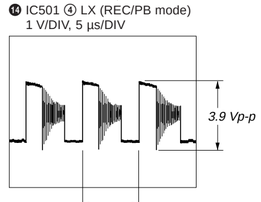
⓬ Q502 Base (REC/PB mode)
200 mV/DIV, 5 µs/DIV



⓭ Q502 Collector (REC/PB mode)
1 V/DIV, 5 µs/DIV

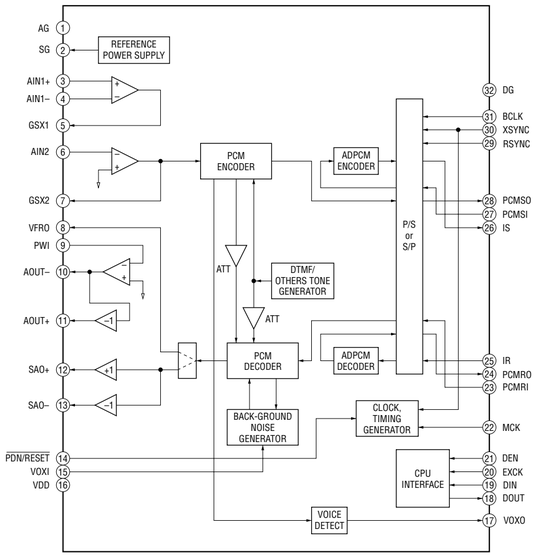


⓮ IC501 ④ LX (REC/PB mode)
1 V/DIV, 5 µs/DIV

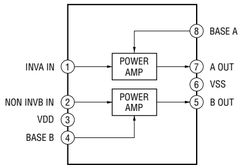


• IC Block Diagrams

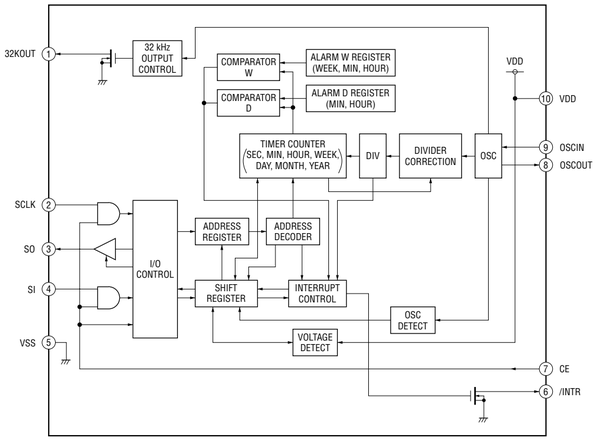
IC101 MSM7590L-01TS-K



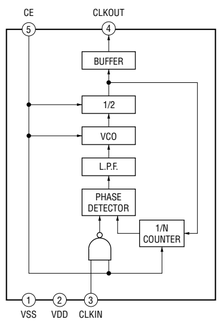
IC102 NJM2076M (TE2)



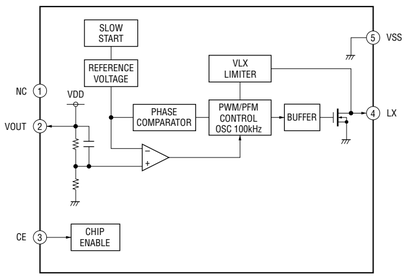
IC703 RS5C348A-E2



IC104 XC25A08510MR



IC501 XC6372C331PR
IC502 XC6372D351PR



4-4. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC701 μPD78P0308GC (SYSTEM CONTROLLER)

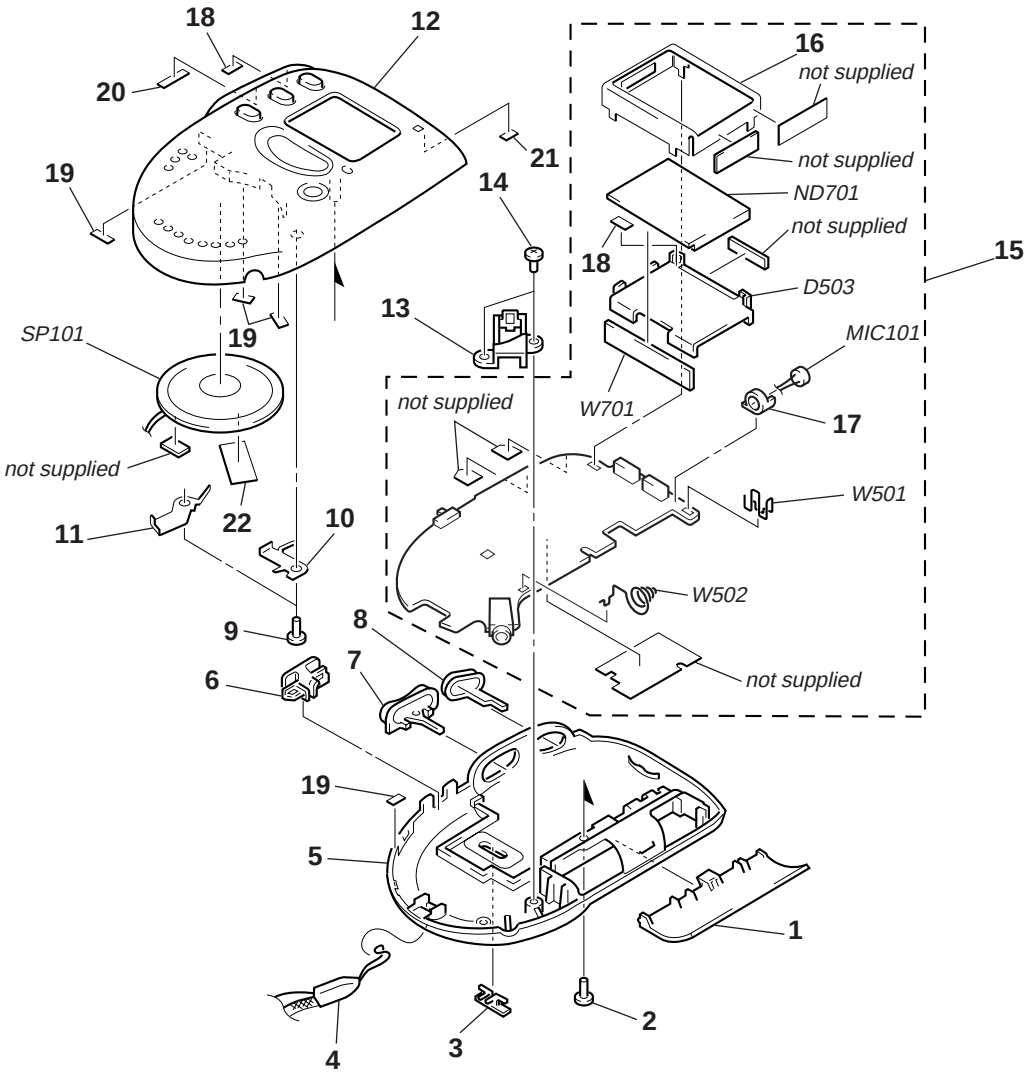
Pin No.	Pin Name	I/O	Function
1	KEY0	I	Key input terminal (A/D input) S701 to S705 (STOP, REC START/STOP, PLAY/STOP (EXECUTE), – ⏮ (SELECT), ⏭ + (SELECT)) keys input
2	KEY1	I	Key input terminal (A/D input) S706 to S710 (FILE, MENU, PRIORITY, ERASE, INDEX) keys input
3	SPDSW	I	PLAY SPEED select switch (S712) input terminal (A/D input) "L": SLOW, "M": NORMAL, "H": FAST
4	XHOLD	I	HOLD switch (S711) input terminal "L": HOLD ON, "H": HOLD OFF
5	LMUTE	O	Line muting control signal output terminal "H": line muting on
6	MICSEL	O	Microphone sensitivity select signal output terminal "L": mic sensitivity high, "H": mic sensitivity low
7	$\overline{\text{XFMCE}}$	O	Chip enable signal output to the flash memory (IC702) "L" active
8	VDD	—	Power supply terminal (+3.3V)
9	AVREF	I	Reference voltage input terminal (for A/D converter)
10	$\overline{\text{XFMWE}}$	O	Write enable signal output to the flash memory (IC702) "L" active
11	$\overline{\text{XFMALE}}$	O	Address latch enable signal output to the flash memory (IC702) "L" active
12	VSS1	—	Ground terminal
13	$\overline{\text{XFMBSY}}$	I	Ready/busy detection signal input from the flash memory (IC702) "L" active
14	$\overline{\text{XFMCLE}}$	O	Command latch enable signal output to the flash memory (IC702) "L" active
15	SYNCOUT	O	FS sync signal output to the MSM7590L (IC101)
16	SYNCMSK	O	X (R) sync control signal output to the MSM7590L (IC101)
17	$\overline{\text{XFMRE}}$	O	Read enable signal output to the flash memory (IC702) "L" active
18	MSKCLK	I	Clock signal input for the X (R) sync output control
19	$\overline{\text{XFMWP}}$	O	Write protect signal output to the flash memory (IC702) "L" active
20	$\overline{\text{XFMSE}}$	O	Spare space enable signal output to the flash memory (IC702) "L" active
21	BEEP	O	Beep sound drive signal output terminal (2.4 kHz)
22	LIGHT	O	LED drive signal output of the LCD back light LED (D503) "H": LED on (back light on)
23 to 26	COM0 to COM3	O	Common drive signal output to the liquid crystal display (ND701)
27	BIAS	O	Power supply output terminal for the liquid crystal display
28 to 30	VLC0 to VLC2	I	Power supply input terminal for the liquid crystal display
31	VSS0	—	Ground terminal
32 to 61	S0 to S29	O	Segment drive signal output to the liquid crystal display (ND701)
62	—	O	Not used (open)
63	XSERV	I	Setting terminal for the service mode Not used (open)
64	$\overline{\text{TEST}}$	I	Setting terminal for the test mode "L": test mode (Normally: fixed at "H")
65	XDSPDEN	O	DSP control interface enable signal output to the MSM7590L (IC101)
66	LEDREC	O	LED drive signal output of the REC indicator (D504 red) "H": LED on (rec mode)
67	LEDPLY	O	LED drive signal output of the PLAY indicator (D504 green) "H": LED on (play mode)
68	AMPPO	O	Power on/off control signal output to the power amplifier (IC102) "H": power on (play mode)
69	XSPOWER	O	Power on/off control signal output for the MSM7590L (IC101) and LED power supply "L": power on
70	RTCCE	O	Chip enable signal output to the RS5C348A (IC703) "H" active
71	$\overline{\text{XPDRST}}$	O	Reset signal and power down detection signal output to the MSM7590L (IC101) "L": reset or power down
72	DSPIS	I	Recording serial data input from the MSM7590L (IC101)
73	DSPIR	O	Playback serial data output to the MSM7590L (IC101)

Pin No.	Pin Name	I/O	Function
74	XBCK	O	DSP bit clock signal output to the MSM7590L (IC101)
75	RTCDI	I	Serial data input from the RS5C348A (IC703)
76	RTCDO	O	Serial data and DSP register control data output to the RS5C348A (IC703)
77	RTCCLK	O	Serial data and DSP register control data transfer clock signal output to the RS5C348A (IC703)
78	IC	—	Fixed at “L”
79	X2	O	Main system clock output terminal (5 MHz)
80	X1	I	Main system clock input terminal (5 MHz)
81	VDD1	—	Power supply terminal (+3.3V)
82	XT1	I	Sub system clock input terminal (32.768 kHz)
83	XT2	O	Sub system clock output terminal (32.768 kHz) Not used (open)
84	$\overline{\text{XRESET}}$	I	System reset signal input from the reset signal generator (IC505) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
85	SYNCIN	I	Interrupt input terminal of the DSP X (R) sync
86	WAKEUP	I	Key interruption processing start signal input terminal
87	RTCINT	I	Interrupt input from the RS5C348A (IC703) (2 Hz)
88	—	O	Not used (open)
89	LPMODE	O	Filter selection signal output terminal “L”: SP mode, “H”: LP mode
90	AVREFO	O	Reference voltage output terminal (for A/D converter)
91 to 98	FMIO0 to FMIO7	I/O	Two-way data bus with the flash memory (IC702) (bit 0 to bit 7)
99	AVSS	—	Ground terminal (for A/D converter)
100	BATT	I	Dry battery voltage detection signal input terminal (A/D input)

SECTION 5
EXPLODED VIEW

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.



Ref. No.	Part No.	Description	Remark
1	4-214-309-01	LID, BATTERY CASE	
2	3-375-114-81	SCREW (1.7X4.5), TAPPING	
3	3-912-036-21	KNOB (MODE)	
4	3-928-815-11	STRAP, HAND	
5	4-214-308-11	CASE (REAR)	
6	4-214-295-01	KNOB (HOLD)	
7	4-214-293-01	BUTTON (SEARCH) (▶▶I +, – I◀◀)	
8	4-214-312-01	BUTTON (PLAY) (▶ ■)	
9	3-375-114-41	SCREW	
10	4-216-129-01	BRACKET (SPEAKER B)	
11	4-214-300-01	BRACKET (SPEAKER)	
12	A-3320-724-A	CASE (FRONT) SUB ASSY	
13	4-214-297-01	BRACKET (JACK)	
14	3-375-114-01	SCREW (M1.7X4)	
* 15	A-3323-080-A	MAIN BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
16	4-214-299-01	BRACKET (LCD)	
17	4-216-159-01	HOLDER, MICROPHONE	
18	4-218-124-01	SHEET (C), ADHESIVE	
19	4-218-419-01	CUSHION (A)	
20	4-218-418-01	SHEET (D), ADHESIVE	
21	4-218-121-01	SHEET (MICROPHONE)	
22	4-217-198-01	SHEET (SPEAKER)	
D503	1-517-824-11	LIGHT, LCD BACK	
MIC101	1-542-373-11	MICROPHONE, ELECTRIC CONDENSER (MIC)	
ND701	1-803-342-11	DISPLAY, LIQUID CRISTAL	
SP101	1-504-691-12	SPEAKER (3.6cm)	
W501	4-214-301-01	TERMINAL (+), BATTERY	
W502	4-214-302-01	TERMINAL (-), BATTERY	
W701	1-694-478-11	CONDUCTIVE BOARD, CONNECTION	

MAIN

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3323-080-A	MAIN BOARD, COMPLETE			
		**********			
	4-214-299-01	BRACKET (LCD)			
	4-216-159-01	HOLDER, MICROPHONE			
	4-218-124-01	SHEET (C), ADHESIVE			
		< CAPACITOR >			
C101	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C102	1-104-852-11	TANTALUM CHIP	22uF	20%	10V
C104	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C105	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C106	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C107	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C108	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C109	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C110	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C111	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C112	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C113	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C114	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C115	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C116	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C119	1-135-181-21	CERAMIC CHIP	47uF	20%	6.3V
C120	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C121	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C126	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C127	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C128	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C129	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C130	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C131	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C132	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C133	1-115-156-11	CERAMIC CHIP	1uF		10V
C134	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C135	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C136	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C137	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C139	1-115-156-11	CERAMIC CHIP	1uF		10V
C141	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C151	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C501	1-124-576-11	ELECT	220uF	20%	4V
C503	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C504	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C505	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C506	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C507	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C508	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C509	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C510	1-104-851-11	TANTALUM CHIP	10uF	20%	10V
C511	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C550	1-115-156-11	CERAMIC CHIP	1uF		10V
C701	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C702	1-113-988-11	TANTALUM CHIP	68uF	20%	4V
C705	1-115-156-11	CERAMIC CHIP	1uF		10V
C706	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C707	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C708	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C711	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C751	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C752	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C761	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< DIODE >			
D101	8-719-941-23	DIODE DA204U			
D102	8-719-941-23	DIODE DA204U			
D501	8-719-073-35	DIODE RB551V-30TE-17			
D502	8-719-073-35	DIODE RB551V-30TE-17			
D503	1-517-824-11	LIGHT, LCD BACK			
D504	8-719-027-84	LED CL-155UR/G-D (OPR)			
D701	8-719-016-74	DIODE 1SS352			
		< FERRITE BEAD >			
FB131	1-414-235-22	INDUCTOR CHIP	0uH		
FB132	1-414-235-22	INDUCTOR CHIP	0uH		
FB503	1-414-235-22	INDUCTOR CHIP	0uH		
FB504	1-414-235-22	INDUCTOR CHIP	0uH		
		< IC >			
IC101	8-759-567-09	IC MSM7590L-01TS-K			
IC102	8-759-289-74	IC NJM2076M (TE2)			
IC103	8-759-574-34	IC LMV358MMX			
IC104	8-759-567-10	IC XC25A08510MR			
IC501	8-759-486-47	IC XC6372C331PR			
IC502	8-759-438-70	IC XC6372D351PR			
IC503	8-759-486-55	IC NJM2370U33-TE2			
IC504	8-759-186-89	IC XC61AN0802MR			
IC505	8-759-333-42	IC XC61AN3002MR			

Ref. No.	Part No.	Description	Remark
IC701	8-759-572-62	IC uPD78P0308GC	
IC702	8-759-496-86	IC KM29V64000T	
IC703	8-759-560-17	IC RS5C348A-E2	
IC705	8-759-058-62	IC TC7S08FU (TE85R)	
IC706	8-759-058-58	IC TC7S04FU (TE85R)	
		< JACK >	
J101	1-785-506-11	JACK (EAR)	
		< COIL >	
L501	1-414-865-11	INDUCTOR CHIP 47uH	
L502	1-414-865-11	INDUCTOR CHIP 47uH	
L903	1-412-006-31	INDUCTOR CHIP 10uH	
		< MICROPHONE >	
MIC101	1-542-373-11	MICROPHONE, ELECTRIC CONDENSER (MIC)	
		< LIQUID CRISTAL DISPLAY >	
ND701	1-803-342-11	DISPLAY, LIQUID CRISTAL	
		< TRANSISTOR >	
Q103	8-729-037-72	TRANSISTOR UN9211J- (TX). SO	
Q104	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q105	8-729-039-57	TRANSISTOR DTC363EKT146	
Q106	8-729-422-87	TRANSISTOR 2SB1073-R	
Q107	8-729-028-28	FET 2SK2036 (TE85L)	
Q108	8-729-038-80	TRANSISTOR 2SA1182-Y (TE85R)	
Q109	8-729-038-80	TRANSISTOR 2SA1182-Y (TE85R)	
Q150	8-729-037-72	TRANSISTOR UN9211J- (TX). SO	
Q502	8-729-047-75	FET CPH3209-TL	
Q505	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX	
Q506	8-729-426-25	TRANSISTOR XP1212	
Q507	8-729-427-74	TRANSISTOR XP4601	
Q508	8-729-048-04	FET 3LN01S-TL	
Q701	8-729-037-74	TRANSISTOR UN9213J- (TX). SO	
Q702	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q703	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
		< RESISTOR >	
R101	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R102	1-216-815-11	METAL CHIP 330 5% 1/16W	
R106	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R107	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R108	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R111	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R112	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R113	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R114	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R115	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R116	1-216-809-11	METAL CHIP 100 5% 1/16W	
R117	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R118	1-216-805-11	METAL CHIP 47 5% 1/16W	
R119	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R120	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R121	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R122	1-216-841-11	METAL CHIP 47K 5% 1/16W	

Ref. No.	Part No.	Description			Remark
R123	1-216-821-11	METAL CHIP	1K	5%	1/16W
R124	1-216-833-11	METAL CHIP	10K	5%	1/16W
R125	1-216-799-11	METAL CHIP	15	5%	1/16W
R126	1-216-821-11	METAL CHIP	1K	5%	1/16W
R131	1-218-446-11	METAL CHIP	1	5%	1/16W
R132	1-218-446-11	METAL CHIP	1	5%	1/16W
R133	1-216-833-11	METAL CHIP	10K	5%	1/16W
R134	1-216-808-11	METAL CHIP	82	5%	1/16W
R136	1-216-801-11	METAL CHIP	22	5%	1/16W
R137	1-216-841-11	METAL CHIP	47K	5%	1/16W
R138	1-216-833-11	METAL CHIP	10K	5%	1/16W
R139	1-216-833-11	METAL CHIP	10K	5%	1/16W
R140	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R141	1-216-864-11	METAL CHIP	0	5%	1/16W
R143	1-216-841-11	METAL CHIP	47K	5%	1/16W
R144	1-216-841-11	METAL CHIP	47K	5%	1/16W
R145	1-218-344-11	METAL CHIP	7.5K	5%	1/16W
R146	1-216-839-11	METAL CHIP	33K	5%	1/16W
R150	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R502	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R505	1-216-853-11	METAL CHIP	470K	5%	1/16W
R506	1-216-857-11	METAL CHIP	1M	5%	1/16W
R507	1-216-849-11	METAL CHIP	220K	5%	1/16W
R508	1-216-853-11	METAL CHIP	470K	5%	1/16W
R509	1-216-845-11	METAL CHIP	100K	5%	1/16W
R510	1-216-821-11	METAL CHIP	1K	5%	1/16W
R511	1-216-811-11	METAL CHIP	150	5%	1/16W
R512	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R513	1-216-821-11	METAL CHIP	1K	5%	1/16W
R514	1-216-833-11	METAL CHIP	10K	5%	1/16W
R515	1-216-853-11	METAL CHIP	470K	5%	1/16W
R551	1-216-853-11	METAL CHIP	470K	5%	1/16W
R553	1-216-819-11	METAL CHIP	680	5%	1/16W
R701	1-216-849-11	METAL CHIP	220K	5%	1/16W
R702	1-216-849-11	METAL CHIP	220K	5%	1/16W
R703	1-216-849-11	METAL CHIP	220K	5%	1/16W
R706	1-216-845-11	METAL CHIP	100K	5%	1/16W
R707	1-216-857-11	METAL CHIP	1M	5%	1/16W
R708	1-216-854-11	METAL CHIP	560K	5%	1/16W
R709	1-216-857-11	METAL CHIP	1M	5%	1/16W
R710	1-216-854-11	METAL CHIP	560K	5%	1/16W
R711	1-216-821-11	METAL CHIP	1K	5%	1/16W
R712	1-216-855-11	METAL CHIP	680K	5%	1/16W
R713	1-216-855-11	METAL CHIP	680K	5%	1/16W
R716	1-216-821-11	METAL CHIP	1K	5%	1/16W
R751	1-216-833-11	METAL CHIP	10K	5%	1/16W
R752	1-216-845-11	METAL CHIP	100K	5%	1/16W
R761	1-216-853-11	METAL CHIP	470K	5%	1/16W
R762	1-216-853-11	METAL CHIP	470K	5%	1/16W
R763	1-216-864-11	METAL CHIP	0	5%	1/16W
R764	1-216-864-11	METAL CHIP	0	5%	1/16W
R765	1-216-833-11	METAL CHIP	10K	5%	1/16W
R766	1-216-833-11	METAL CHIP	10K	5%	1/16W
R767	1-216-833-11	METAL CHIP	10K	5%	1/16W
R768	1-216-833-11	METAL CHIP	10K	5%	1/16W
R769	1-216-833-11	METAL CHIP	10K	5%	1/16W
R770	1-216-833-11	METAL CHIP	10K	5%	1/16W
R771	1-218-883-11	RES, CHIP	33K	0.5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remark
R772	1-218-911-11	RES, CHIP	470K	0.5%	1/16W
R773	1-218-863-11	RES, CHIP	4.7K	0.5%	1/16W
R774	1-218-871-11	RES, CHIP	10K	0.5%	1/16W
R775	1-218-875-11	RES, CHIP	15K	0.5%	1/16W
R776	1-218-879-11	RES, CHIP	22K	0.5%	1/16W
R777	1-218-883-11	RES, CHIP	33K	0.5%	1/16W
R778	1-218-911-11	RES, CHIP	470K	0.5%	1/16W
R779	1-218-863-11	RES, CHIP	4.7K	0.5%	1/16W
R780	1-218-871-11	RES, CHIP	10K	0.5%	1/16W
R781	1-218-875-11	RES, CHIP	15K	0.5%	1/16W
R782	1-216-849-11	METAL CHIP	220K	5%	1/16W
R783	1-216-845-11	METAL CHIP	100K	5%	1/16W
R784	1-216-849-11	METAL CHIP	220K	5%	1/16W
R786	1-218-879-11	RES, CHIP	22K	0.5%	1/16W
		< VARIABLE RESISTOR >			
RV101	1-225-500-11	RES, VAR, CARBON 10K/10K (VOL)			
		< SWITCH >			
S701	1-771-274-11	SWITCH, TACTILE (STOP)			
S702	1-771-274-11	SWITCH, TACTILE (REC RLAY/STOP)			
S703	1-771-585-11	SWITCH, TACTILE (PLAY/STOP ► ■ (EXECUTE))			
S704	1-771-585-11	SWITCH, TACTILE (⏮ –, (SELECT))			
S705	1-771-585-11	SWITCH, TACTILE (⏭ +, (SELECT))			
S706	1-771-274-11	SWITCH, TACTILE (FILE)			
S707	1-771-248-11	SWITCH, TACTILE (MENU)			
S708	1-771-248-11	SWITCH, TACTILE (PRIORITY)			
S709	1-771-274-11	SWITCH, TACTILE (ERASE)			
S710	1-771-274-11	SWITCH, TACTILE (INDEX)			
S711	1-771-586-11	SWITCH, SLIDE (HOLD)			
S712	1-771-587-11	SWITCH, SLIDE (PLAY SPEED)			
		< TERMINAL >			
W501	4-214-301-01	TERMINAL (+), BATTERY			
W502	4-214-302-01	TERMINAL (–), BATTERY			
		< CONNECTION CONDUCTIVE BOARD >			
W701	1-694-478-11	CONDUCTIVE BOARD, CONNECTION			
		< VIBRATOR >			
* X701	1-767-994-11	VIBRATOR, CRYSTAL (32.768kHz)			
X702	1-767-144-21	VIBRATOR, CERAMIC (5MHz)			
**********					
		MISCELLANEOUS			
		**********			
SP101	1-504-691-12	SPEAKER (3.6cm)			
**********					

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-865-520-01	MANUAL, INSTRUCTION (JAPANESE) (Tourist)	
	3-865-520-11	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-865-520-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (Canadian, AEP, E)	
	3-865-520-31	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP, E)	
	3-865-520-41	MANUAL, INSTRUCTION (GERMAN, DUTCH) (AEP)	
	3-865-520-51	MANUAL, INSTRUCTION (SWEDISH, ITALIAN) (AEP)	
	3-865-520-61	MANUAL, INSTRUCTION (ENGLISH, KOREAN, CHINESE) (Tourist)	

99A0572-1
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Published by Quality Engineering Dept.
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